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Stack allocation of objects offers more efficient use of cache memories on modern

Stack allocation of objects offers more efficient use of cache memories on modern computers, but finding objects that can be safely stack allocated is difficult, as interprocedural escape analysis is imprecise in the presence of virtual method dispatch and dynamic class loading. We present a new technique for doing optimistic stack allocation of objects. Our technique does not require interprocedural analysis and is effective in the presence of dynamic class loading, reflection and exception han ...

Keywords: Java, garbage collection, stack allocation

² Fast, effective code generation in a just-in-time Java compiler

Ali-Reza Adl-Tabatabai, Michał Cierniak, Guei-Yuan Lueh, Vishesh M. Parikh, James M. Stichnoth

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Additional Information: full citation, abstract, references, citings, index terms

A "Just-In-Time" (JIT) Java compiler produces native code from Java byte code instructions during program execution. As such, compilation speed is more important in a Java JIT compiler than in a traditional compiler, requiring optimization algorithms to be lightweight and effective. We present the structure of a Java JIT compiler for the Intel Architecture, describe the lightweight implementation of JIT compiler optimizations (e.g., common subexpression elimination, register allocation, and elim ...

3 Techniques for obtaining high performance in Java programs

Iffat H. Kazi, Howard H. Chen, Berdenia Stanley, David J. Lilja September 2000 **ACM Computing Surveys (CSUR)**, Volume 32 Issue 3

Publisher: ACM Press

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
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S2 .	233	712/202	US-PGPUB; USPAT	OR	ON	2006/11/03 16:36
S3	1441	((707/206) or (712/202) or (717/146-148)).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/11/03 16:40
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S5	1	("6058457").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/11/03 16:41

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30	. 3	((java adj card) javacard) with garbage adj collect\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/14 13:36
S7	1	(evaluation adj stack) with garbage adj collect\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/14 14:15
S8		(evaluation adj stack) same garbage adj collect\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/14 14:20
S9	0	(evaluation adj stack) same operand same bytecode	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/14 14:21
S10 ·	32	(evaluation adj stack) same operand	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/14 14:28
S11	6	stackmap	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR .	ON	2006/11/14 14:51
S12	20	(stackmap typemap)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/14 14:51
S13	3	(stackmap typemap) with method	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/14 14:52

EAST Search History

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